624.1305
AIR

The Air Line Pilot

June, 1955

Toward Tomorrow --- Page 3

Accident Prevention --- Page 9

THE LIBRARY OF THE
JUN 1 19
UNIVERSITY OF ILLINOIS

Aviation Legislation
—Page 5—

NOTICE!
ALPA MEMBERS ONLY

TRY THE FABULOUS MINOX CAMERA AT OUR EXPENSE!
WE GIVE YOU ONE ROLL OF FILM FREE!
WE DEVELOP AND ENLARGE YOUR 1ST 50 PICTURES FREE!

Weighs 2½ oz.—
less than your keys

Takes 50 exposures on a roll, black and white or color. Built-in green and orange filters. Shutter cocks and winds film automatically. Speeds from Time up to a fantastic 1/1000 sec. Photographs anything from 8 inches to infinity with amazing detail. NO FLASH NECESSARY FOR INSIDE SHOTS!

- Always with you—carry it in any pocket.
- Unsurpassed for candid shots.
- Excellent Minox processing facilities have been established in America for both black and white prints and enlargements . . . and color!
- A MUST for crash and safety representatives.
- Try Minox for 15 days. Full refund if you're not delighted.
- Short on cash? No money down—$10 a month.

BUY THE FABULOUS MINOX CAMERA ON SPECIAL ALPA TERMS EXCLUSIVELY FOR AIR LINE PILOTS. OWN A MINOX FOR ONLY

$10.00 MONTHLY

KARL RUPPENTHAL
1711 GUINDA STREET
PALO ALTO, CALIFORNIA

O Enclosed is $10.00. Send me a MINOX outfit on speci ALPA terms. If I am not delighted after seeing my fir pictures, you will refund my deposit. The pictures are min

O Please send complete ALPA prices and details on yo $10.00 a month plan.

NAME_____ AIRLINE_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

Toward Tomorrow

The Brotherhood of the Air Shines with Hope for Man's Capacity to Live Peacefully Together.

By Howard G. Kurtz, Jr.

Copyright 1955, Howard G. Kurtz, Jr.

A towering overcast blankets London and within its gray expanse hurtle unseen and unseeing a score of air transports from as many different countries. Riding confidently in the cabins of the sleek silver carriers are a thousand souls of diverse creeds and breeds. And, although the great ships weave and cross in an intricate pattern of traffic without sight or sound of one another, all are safe . . . all are secure.

Thousands of times each year this fresco of our sky is re-enacted around the globe—New York, Singapore, Paris, Rio de Janeiro, Istanbul, Stockholm, San Francisco, Rome. For against the background of the world's dark frictions, international air transport has created, like a bright beacon of hope, a record of man's capacity to cooperate with man. And this without surrender of the special religious faith, or pride of race, or loyalty to country, dear to each and every one.

Those who strive for the ideal of human brotherhood at the level of religious organization, or education, or diplomacy, may well note with rejoicing what a high triumph of human capacity for cooperation has been hammered out by pilots, mechanics, engineers and weathermen at the level of daily toil with the tools of the air age.

We who work with these tools have long ago proven to ourselves that for our building, the golden rule is the law of life . . . that dedication to the enforceable safety of others is the one infallible way to assure our own safety.

We who have laced the globe with a method of travel which touches the doorstep of every man, could not do so without a common denominator. We are of every flag and color and faith and ideology under the sun. We had to find a value upon which all our variations could be reconciled without infraction of the creed or pride of any.

And we have found this common denominator in mutual dedication to human safety . . . doing unto others as we would have others do unto us.

Furthermore, in the practical application of this common denominator, we can now testify with certainty that human nature is ready for this discipline of safety. We invoke it every day of every year in every sky of the free world.

Never from the cloudbank above London comes a pilot's voice saying, "Give way to the Union Jack."

Never does a co-pilot cry into his microphone, "I demand priority landing in the name of the one true faith."

Never does a stewardess announce to her passengers, "We will be landing in five minutes because we carry the Star of David on our wing."

Yet, if from that cloudbank comes perchance a call from an obsolete twin-engined plane flying the flag of some obscure little principality, "I've lost an engine and cannot hold my place in the pattern," then the great planes of the great flags give way at once and the objective of all concerned concentrates on bringing the little fellow safe to port. Each understands that his own safety would be jeopardized by another plane out of control in the cloud. Any rule less than the golden rule would be too dangerous a principle upon which to build air transportation.

During a recent Christmas season,

Vol. 24, No. 6

The Air Line Pilot

June, 1955

Entered as Second Class Matter at the Post Office at Chicago, Ill. Copyright; 1955, by Air Line Pilots Association, International.

Clarence N. Sayen
President
Charles E. Beatley
First Vice-President
Kay McMurray
Executive Vice-President
F. A. Spencer
Secretary
D. J. Smith
Treasurer

REGIONAL VICE PRESIDENTS

W. M. Masland ..... Region I
J. P. Talton ..... Region II
M. E. Swanson ..... Region III
D. S. Spain ..... Region IV
C. A. Peternell ..... Region V

Larry Cates
Legislative Representative

Published Monthly by the Air Line Pilots Association, International, Affiliated with A. F. of L. Publication offices: 55th Street and Cicero Avenue, Chicago 38, Illinois.

Advertising appearing in this magazine cannot be construed as being an endorsement by the Air Line Pilots Association or the Air Line Pilots.

Annual Subscription, $2.50

Ed Modes, Editor

His Eminence, Francis Cardinal Spellman, flew the scheduled airlines westward around the world from New York to New York, spending Christmas Day in Korea. Some idealist noted that Thailanders, Burmese, Hindus, Pakistanians, Iraqui, Lebanese, Italians, Greeks, Turks, Japanese, et al., had joined in duty to assure the Churchman a safe and happy journey, and pointed out that this was a notable tribute to a wonderful man.

Notables, All

Now none could agree more heartily than we that Cardinal Spellman is a wonderful man; but it was not for this reason that Moslem and Greek Orthodox, Jew and Hindu, Buddhist and Taoist, Protestant and Catholic, and even agnostics among us were instrumental in one way or another in serving Cardinal Spellman. He was a stranger and we took him in with absolute religious tolerance because we cannot afford intolerance. Any less rule would be dangerous . . . not to the Cardinal but to us. During 1954, we carried some 55,000,000 souls along the airways of the free world with the same concern as that afforded the Catholic Churchman. Any human being is a high ranking notable while aloft . . . and this, not for his, but for our own sweet sakes . . . we pilots, mechanics, control tower operators and others who have a life and a livelihood at stake.

This safety discipline . . . this golden rule with the teeth of law . . . this ideal which is essential to our survival . . . stems from peculiar characteristics which distinguish it from disciplines imposed by force.

In the first place, it reflects what we have found to be universal human impulses.

I recall its first conscious impact on my own life. A transport had taken off from Detroit, where I was an airline station manager some 20 years ago. Although icing conditions were not forecast, the Captain of the plane soon encountered them, and promptly radioed a warning back to the station. Without any studied idealism, I swiftly notified each other airline office and the Weather Bureau. Within two minutes, teletype lines were flashing the news to distant ports from which planes might be taking off for Detroit. Radio messages crackled to all ships in flight around the Michigan area.

When Danger Threatens

This was not disaster. It was not even emergency. It was only potential danger. But when the chore was done I recall the lift it gave me. The mere suggestion of danger had shown that competition among us was only skin deep and could be wholly discounted in any situation where human safety was involved.

In those days there were no company rules or national codes crystallizing human instincts into mandatory safety procedures. But they came soon and they found ready acceptance all around the world. The incident long ago at Detroit has been multiplied millions of times since in every tongue and by groups of airmen representing every color and class on earth. The central fact is that human nature was ready for such a triumph.

Sometimes the fact leads also to new concepts of authority. For example, whose authority runs an airline?

Not long ago an airline president had planned a special flight for leading publishers and others. It was an ultra important occasion. To everyone's relief, arrangements clicked perfectly on the day of departure. Passengers and baggage were whisked through customs with a minimum of red tape. Fluttering staff members and public officials lent an aura of excitement to the scene. Guests were briefed and seated. The airline president was beaming his satisfaction. Crew members were at stations. The big props turned over and speeded up. All was set.

Then suddenly the props throttled back and stopped. The ramp was pushed to the door again. The door opened and all looked back. A grim face poked into the cabin and a blunt bass voice announced. "This plane won't take off today."

Who Runs an Air Line?

It was the voice of the Chief Mechanic. He had found an oil leak.

Who runs an airline? Did the president fume at the Chief Mechanic? Not he. "Thank you Chief," he said, and de-planed his guests for a luncheon downtown and a departure later in the day in another aircraft. So who runs an airline? Here again it is safety alone that delegates authority . . . the ideal of the golden rule is the only principle that will serve . . . not because it is an ideal but because it is the law of self-preservation. It can be supported by management and labor unions alike; by passengers whose planes are disrupted; by stockholders who furnish the sinews of finance; by governments whose flags compete on commercial skies.

And out of experience in application of our golden rule . . . our law of survival, if you will . . . comes a by-product of no mean significance.

Each and all of us come to understand that we can allow the other to hold fast his faith and pride as "best," "finest," "only," "supreme," without surrender of our own. Who ever developed great faith in something he labeled "second best"? We ask none to conform in any respect except to that ageless common denominator which is central to the teachings of Zoroaster and Paul, Abraham and Buddha, Confucius and all other founders of the known 64 good-will religions . . . do unto others as you would have others do unto you . . . and that is the crux of human safety.

A Common Denominator

What use the leaders of the nations, the molders of thought, the diplomats, the teachers of arts and science and dogmas, may make of our demonstration of human cooperation . . . our forging of the golden rule into a workable law of life . . . is unknown to us. All we can do it to point out that we have found a common denominator and built upon it a system of physical access which makes our world a community of potential brotherhood. And

(Continued on Page 17)

For Reprints of This Article

Reprints of this article may be obtained in English by any individual, school, church or other recognized group by making such request directly to one of the following:

Flight Safety Foundation
471 Park Avenue
New York City
or
Dr. Everett Clinchy, Pres.
National Conference of Christians and Jews
381 Fourth Avenue
New York City

Airlines desiring permission to reprint the article in foreign languages should refer to instructions in IATA Public Relations Memorandum No. 6850, dated January 27, 1955, to all member public relation officers.

Any U. S. carrier desiring to obtain reprints with its own identification imprinted may do so through the authorized printer, Mr. Bernard Sherman, Ace Advertising Services, 39 Chambers Street, New York City.

ALPA and Aviation Legislation

The 84th Congress Has Proven Itself Exceedingly Airminded. Here Are ALPA Views on Current Legislation as Presented to Congressional Committees.

By Larry Cates
ALPA's Legislative Representative

With many legislative items of general aviation and specific pilot interest before this session of Congress, ALPA has been called numerous times to testify before Committees of the 84th Congress working on these bills.

One was the Local Service Permanent Certification Bill, now passed by both houses. Another was the Military Career Incentive Act now passed by Congress and signed by the President. The most recent are Bills S.308, introduced by Senator Bricker, and S.1119, introduced by Senator Magnuson, both proposals to amend the Civil Aeronautics Act of 1938.

First efforts along this line were made last year when the late Senator McCarran introduced Bill S.2647 in the 83rd Congress, a bill which would likewise amend the Civil Aeronautics Act but more extensively than S.308 and S.1119.

Nevada's Senator Alan Bible (with model of DC-3) talks to two pilots and other flight crew members during a recent visit to his office.

ALPA's Objectives

ALPA's views on the current legislation were presented by President Sayen to the Senate Interstate and Foreign Commerce Committee.

In presenting his views, Sayen outlined the Association's ever-continuing interest in aviation legislation.

"As spokesman for the air line pilot in his relationship with municipal, state, federal and international organizations," he pointed out, "the Air Line Pilots Association has a very deep and personal interest in every phase of legislation concerning commercial aviation, or a regulation or interpretation rising from that legislation, since any development is likely to profoundly affect the personal safety, security and professional career of its members."

Concerning major policy questions raised by the bill, Mr. Sayen outlined these overall reactions and opinions of ALPA:

- ALPA still strongly favors the re-establishment of an Independent Air Safety Board.
- Personnel engaged in air line maintenance should not be exempted from the requirement of holding airman certificates.
- Air Contract Service should be regulated to the same degree as other carriers.
- U. S. flag carriers transporting mail should receive the same rate as that paid foreign carriers for the same service.
- The Railway Labor Act should be amended to make all air contractors subject to it as well as common carriers. However, attempts to limit the rights of certain employees under it should not be tampered with.
- Power to grant exemptions from minimum standards of compensation should be removed from the present act.
- Provision should be made to protect an individual who is compelled to give testimony which might tend to incriminate him or subject him to a penalty.
- In the imposition of civil penalties an innocent-until-proven-guilty concept should prevail and moreover the penalty should be realistic.
- The pilots of an aircraft should be given clear statutory authority to take such action as is necessary to protect the aircraft, passengers, and crew from dangerous passengers or others, thus placing the officer in charge of the aircraft in a status comparable to that of the Captain of a ship.

The following excerpts highlight President Sayen's testimony:

Independent Air Safety Board

"In our previous testimony on S. 2647, the McCarran Bill, we supported certain aspects of the proposal to reorganize the Civil Aeronautics Board and Civil Aeronautics Administration. We are still of the opinion that such a reorganization is desirable in the best interest of civil aviation.

"We are particularly interested in the re-establishment of an Independent Air Safety Board removed from the control of the Civil Aeronautics Board. . . . With the ever increasing size and complexity of our commercial aviation structure, this problem will become more and more important to the national interest and we believe that Sen-

ator McCarran's efforts at reorganization were timely and well founded. We urge that work go forward on them."

Airman's Certificates

On ALPA's Belief: "Section 5 of S. 308 amends the Civil Aeronautics Act of 1938, as amended, to permit the Board to exempt mechanics of certificated repair stations, certain manufacturers, and those mechanics of certificated air carriers, employed in their maintenance or repair shops, from the necessity of obtaining airman certificates under the law. We are opposed to that provision which allows exemption for personnel engaged in air line maintenance. It is our firm belief and experience that those who are responsible for the maintenance of today's commercial aircraft should have at least a minimum of qualifications as required by present certificates. Not only does this insure at least minimum requirements and a selective process in securing a more apt and conscientious employee, but it adds a greater degree of stability to the maintenance field and the individuals attracted to that work. Increased complexity is making it constantly more difficult to maintain high standards of safety. There should be no dilution of standards."

On its Importance to Air Safety: "It is most imperative, therefore, to the safety of air transportation that those people employed in the maintenance and overhaul of air line flight equipment be certificated in demonstration of minimum qualifications for the responsibility they hold. We are unable to comprehend the argument advanced that a broad general knowledge of the mechanical field is not necessary for those specialists operating on the different aircraft components any more than we can comprehend the argument that a heart specialist should not be required to have a basic knowledge of the functioning of other portions of the anatomy. A sound initial qualification for his chosen career is necessary if an individual is to advance to a skilled technical status. Further, we wish to call the Committee's attention to the fact that H.R. 7395, a Bill to change the definition of "Airman" in the Civil Aeronautics Act of 1938, as amended, was introduced in the 83rd Congress. The Bill at introduction did not contain a provision for exemption for those mechanics working for a certificated air carrier. However, there was an amendment to the Bill proposed which would accomplish that purpose. H.R. 7395 was referred to the Committee on Interstate and Foreign Commerce in the Senate. After extensive deliberation, Senator Bricker, Chairman of the Committee, submitted a report on the proposed legislation. Following is a quotation from that report dealing with the proposed amendment to exempt mechanics working for certificated air carriers:

" 'The Air Transport Association of America, representing the scheduled air line industry, suggested an amendment to the Bill which would extend this legislation to authorize the Civil Aeronautics Board to exempt, in addition, air line maintenance employees from the Airman certification requirements. The Committee finds that no sufficient justification has been presented for such an amendment to this legislation.'

"In our opinion, the same lack of justification exists today. S. 1119 does not include the definition of 'Airman' and consequently, we favor the approach embodied in that Bill."

On The Cover

ALPA Committee for Permanent Certification for Local Service Carriers expresses appreciation to Hon. John Bell Williams (D-Miss.), author of H. R. 2225. Shown (l. to r.) are: Larry Cates, ALPA; Captains Bob Lockett, Central; George Klika, Ozark; R. W. Pontius, Ozark; D. O. Lafferty (Chairman of Committee) Southwest Airways; Lee Anderson, North Central; Lee Payne, Bonanza; Walt Green, Southern; Carl Cochran, Ozark; John C. Rauchenstein, Lake Central; S. G. Gondek, Mohawk, and Max Christman, West Coast Airlines. Seated, Hon. John Bell Williams.

Declarations of Policy

On Regulation of All Carriers: "We support the policy that air contract service should be regulated to the same degree as other air carriers in order to assure the highest degree of safety as well as assure sound economic conditions in the air transportation industry. We have a primary interest in all safety matters inasmuch as there are always pilots on the aircraft irrespective of the type of operation and our professional and personal security is involved. The Air Line Pilots Association has supported the policy for many years that aviation cannot condone a differential in safety standards."

On the U. S. Position in World Aviation: "In addition to this provision which is contained in both Bills under consideration, it was felt that Section 13-H of S. 308 which provides for the maintenance by the United States of the greatest possible influence at all times in world aviation should be adopted. Our Association is an active affiliate of the International Federation of Air Line Pilots Associations, an affiliation of the pilot organizations of some 22 countries. We also take an active interest in the work of the International Civil Aviation Organization. Consequently, we are acutely aware of the influence exerted throughout the world by air transportation. It is felt that to do other than to exert the greatest possible influence at all times in world aviation would constitute a derogation of our present position among the family of nations. We support the approach of S. 308 in this regard."

Mail Rates

"With reference to this subject, we wish to direct our comments specifically to that portion of both Bills which provides that the Board in fixing rates for the foreign air transportation of mail by United States carriers shall take into consideration, among other factors, the rates paid by the United States to foreign air carriers for similar service. Our international air carriers compete with the air carriers of many other nations. It is incongruous that the United States Government should pay a foreign air carrier for the transportation of our mail a rate in excess of that provided for our own flag carriers for rendition of the same service, but for the past several years such a condition has existed. As the Members of the Committee are aware, our Government by treaty pays a rate to foreign air carriers for the transportation of our mail known as The Universal Postal Union Rate which is in excess of the payment made to our own carriers. We believe that the United States carriers who are competing with the heavily subsidized carriers of other nations should receive a rate commensurate with that being given to their

competition. If this situation existed today or was viewed in its true perspective, it is believed that the so-called subsidy being paid to our international air carriers would disappear or be substantially reduced. Consequently, we support the portions of these Bills which would cause consideration of this fact in fixing air mail rates."

Labor Act Amendments

On What Should be Done: "Section 48 of S. 308 would amend Section 201 of the Railway Labor Act in two respects. First it would make air contractors as well as common carriers subject to the Railway Labor Act. The Railway Labor Act is a model of labor legislation and has provided an excellent means for the settlement of labor disputes in air transportation. In our opinion, any air carrier presently operating in interstate air commerce or operating in such a manner so as to affect interstate air commerce is subject to the Railway Labor Act at the present time. If there is any doubt, it should be clarified. It is desirable both to the employer and employees that the processes of the Railway Labor Act be available to them for the settlement of any disputes which arise and, consequently, the provisions of the Act should be made applicable to all carriers who hold any type of operating certificate or operate in any manner so as to affect interstate air commerce."

On What Should Not be Done: "Secondly, Section 48 of S. 308 would attempt to limit the right of certain employees to organize by altering the definition of the term 'employee' or 'subordinate official' as presently contained in Section 201 of the Railway Labor Act. We are strongly opposed to this amendment. Based on our experience, it is our opinion that such an amendment would create confusion in the industry and result in innumerable labor disputes. In addition, it would destroy established patterns of representation and deny basic privileges to many individuals.

"The language of the proposed amendment itself is faulty. It is so broad and general that it could be construed to encompass practically all employees. Under the present practice, the administrative agency of the Railway Labor Act, the National Mediation Board, is charged with determining what constitutes a proper craft and class for representation purposes under the Railway Labor Act and what constitutes an employee or subordinate official. The decision of the National Mediation Board is reached after extensive hearings on the subject and is predicated on the facts involved in the particular case. The language of the proposed amendment is so all inclusive that it would practically preclude the exercise of independent judgment by the Board and would result in the destruction of many craft and class determinations carefully established by the Board over many years. We quote for your convenience the language of the proposed amendment:

" 'Provided, That the Terms "employee" or "subordinate official" shall not include any individual having authority, in the interest of a carrier or contractor, to hire, transfer, suspend, lay off, recall, promote, discharge, assign, reward or discipline other employees, or responsibility to direct them, or to adjust their grievances, or effectively to recommend such action if, in connection with the foregoing, the exercise of such authority is not of a merely routine or clerical nature, but requires the use of independent judgment.'

"It is obvious from the foregoing that the broad and all-inclusive language could deny representation to practically all employees in any position of responsibility.

"S. 1119 does not contain this amendment and we support the exclusion of it."

Exemptions from Labor Law

"We again wish to reemphasize our position taken during the hearings on S. 2647 that the power to grant exemptions from minimum standards of compensation should be removed from the present Act. The minimum standards established in the Civil Aeronautics Act of 1938, as amended, are those established in 1934. The passage of time has caused them to be in fact minimum standards far below the normal rates of compensation being paid. We can see no justification for permitting an exemption from such minimum standard for any air carrier. Therefore, we urge that Section 416 of the present Act be amended to eliminate any authority to grant exemptions from compliance with the labor conditions as outlined in the Act."

Compelling Testimony

"Section 1004 (i) of the Civil Aeronautics Act of 1938, as amended, is designed to protect an individual who is compelled to give testimony which might tend to incriminate him or subject him to a penalty. This provision of the Act is necessary to protect the rights of individual citizens and is particularly important in this legislation so as to enable accident investigators to secure the maximum amount of information for the prevention of future accidents.

"We believe the language of the present Act is clear in that it provides for the protection of an airman against civil fines and penalties in those instances where he is compelled to testify. For some reason, however, the Administrator of Civil Aeronautics has recently taken the position that this protection applies only in criminal actions and that in civil actions, which may result in monetary penalties or loss of license, the airman is not entitled to this protection as provided in the law. In this regard, the Administrator is in conflict with a decision of the Civil Aeronautics Board holding to the contrary. The Administrator has appealed the decision of the Civil Aeronautics Board to the U. S. Court of Appeals of the District of Columbia and, in our opinion, is attempting to deny to airmen the basic protection which Congress intended to provide for them in including this provision in the Civil Aeronautics Act of 1938. We believe that this protection is essential to insure that there is a free flow of information in the investigation of any incidents or accidents in the interest of maximum safety in air transportation. It is urged, therefore, that the Act be amended in such a manner as to clearly spell out the intent of Congress in this regard."

Civil Penalties

On Expeditious and Proper Enforcement: "S. 308 contains a proposed amendment of Section 32 to allow the imposition of civil penalties for violations of Sections XII, IV-A and IV. This amendment accommodates the desire of the Civil Aeronautics Board for a more flexible method of enforcement of the provisions provided in the aforementioned sections of the Civil Aeronautics Act. The Board evidently feels that this is a necessary addition to the administrative and criminal remedies presently available to them for economic violations. We agree with the Civil Aeronautics Board that it is desirable that a more expeditious method of enforcement is necessary. We are mindful of recent instances where certain air carriers have persisted in filing unrealistic public schedules misrepresenting to the public their capabilities to provide air transportation. Several carriers have persisted in such disregard of scheduling requirements in the public interest for well over a year without effective enforcement or remedial action being taken by the Board. This has been true, either as a result of the

reluctance of the Civil Aeronautics Board to enforce its own regulations or the lack, in their opinion, of a realistic means of enforcement. Under any circumstances, the public has been deluded by public misrepresentations of flight schedules for more than a year without remedial action."

On Rights of Individuals and Equality of Treatment: "On the other hand, we are mindful of the fact that the authority to impose civil penalties results in the ex parte determination of any charges of law violation. Such an authority is presently exercised by the Administrator against airmen where charges of alleged violations of the Civil Air Regulations are made. The individual airman is then faced with the problem of either paying the penalty, even though he is convinced that he is innocent of the alleged charges, or facing the expense and loss of time entailed in defending a suit brought in the Federal Courts to enforce the penalty, which suit will probably cost the government and the defendent many times the amount of the penalty. Pilots have described this system as an 'extortion' method of enforcement. In view of the foregoing, we suggest the Act be amended in such a manner that the right of the Administrator or the Civil Aeronautics Board to impose civil penalties on a carrier or airman be established; however, a change should be brought only after a proper screening by the Board to make certain that a violation has occurred, that such violation warrants a penalty, and that the penalty asked is realistic. In any event, the carriers and airmen should be afforded equal treatment by the provisions of the Act in this regard."

Authority for Safety

"Senate Document No. 163, titled AVIATION STUDY, prepared for the Committee on Interstate and Foreign Commerce, U. S. Senate, and presented by Mr. Bricker on August 20, 1954, proposed an amendment of Section 1101 of the Civil Aeronautics Act by adding a new Subsection (b) to read as follows:

"'(b) An air carrier, foreign air carrier, air contractor or foreign air contractor, through the pilot in command of any aircraft, shall have authority, while an aircraft of such carrier or contractor is engaged in air navigation, including the time such aircraft is on the ground, to take such action as may in the judgment of such officer be reasonably necessary in the interest of safety or the reasonable comfort of the passengers and the members of the crew.'

"The explanatory material pointed out that this amendment was urged by the air transport industry 'to give clear statutory authority to the pilot of an aircraft to take such action as is necessary to protect the aircraft, passengers and crew from dangerous passengers or others, thus placing the officer in charge of the aircraft in a status comparable to that of the captain of a ship.' We urge that such an amendment be adopted.

"This problem has been a source of concern to the pilots of U. S. air carriers and the pilots of other countries for some time. The International Federation of Air Line Pilots Associations has been active for some years in seeking to have the International Civil Aviation Organization clarify and clearly establish the authority of the pilot to carry out the responsibilities placed upon him. Present Civil Air Regulations specify the responsibility imposed upon an aircraft commander and there are contentions that, inherent in the imposition of such responsibilities, is the authority with which to carry them out. However, we believe that the amendment proposed is a necessary addition to the Act in order to provide the necessary authority for the pilot in command to take such actions as are necessary in the protection of life and property in much the same manner as such authority has historically been given to the captain of a ship at sea."

The Success of First Class Mail by Air

The Letter-Mail-By-Air Experiment Is Proving Sound By Saving Dollars and Time.

First class mail by air is writing its best arguments for permanent adoption in accomplishments. They are arguments that everyone should understand —savings of fantastic amounts of time to the busy business world plus actual money savings to the postal service.

This highly successful three-cent-mail-by-air experiment being conducted by the U.S. Post Office Department has already saved time-conscious American businessmen in excess of 11.5 billion hours, according to the latest data officially released by the postal service.

Serves Over 185 Cities

Begun in October, 1953, to test the feasibility and cost of transporting first class mail by the fastest means available, the experiment is now being operated between more than 185 cities. The fast commercial transports of the scheduled airlines are already saving millions of hours in time normally consumed in shipping mail from post office to post office.

A typical example is the mail being carried experimentally between New York and Chicago. Each bag of mail carried by air reaches its destination approximately 12 hours quicker when flown between these commercial hubs and the latest records indicate that well over 5.5 billion hours have already been shaved off delivery time between the two points.

Other examples show that mail being flown experimentally between New York and Florida points has saved 1.7 billion hours. Between Washington and Chicago another 1.7 billion hours has been saved and in just the first four weeks of 1954 people living in cities on the West Coast have benefited by a saving of nearly 800 million hours.

Speed Impressive

Even more impressive is the fact that each letter flown between Chicago and Miami reaches its destination 35 hours and 45 minutes—almost one and a half days—quicker than if delivered by rail.

Although dollars saved by the overall experiment have not been tabulated, recent figures show that the Post Office receives $2,314 for each ton of mail flown between New York and Chicago. Of this amount the airlines are paid $134.66 for their service and the balance is retained by the postal service for its operating ground revenues.

When it all adds up to giving the American public the best for less, it seems logical that serious consideration should be given to keeping first-class-mail-by-air as part of our postal service, not as an experiment, but as permanent policy.

Effective Accident Prevention

Among Other Things, a Punitive Regulatory Concept that Balks Incident Reporting Stands in the Way of an Effective Accident Prevention Program.

By Jerome Lederer
Director, Flight Safety Foundation

The purpose of an effective accident investigation and prevention program is, of course, to assure greater safety; to increase the margin between a safe and an unsafe operation. In a broader sense, safety is the result of operational efficiency because safety can be defined as the elimination of unwanted, unplanned events.

For example, an airplane takes off with heavy frost on its wings; the flight is completed without any trouble. No accident occurs but the margin between a safe and an unsafe operation was reduced. It was an unwanted, unplanned event. It should have been prevented because ultimately, if allowed to continue, an accident will occur.

Another example might be a DC-6 and a Constellation flying on the same airway in opposite directions, both at the same altitude but with the altimeters indicating a separation of 1000 feet. Some people, even pilots, will jump to the conclusion that one of the pilots was careless; a more judicial approach might show that the fault was inherent in the airflow over a particular pilot tube installation. No collision occurs, but the potential was there. Another example of an unwanted event.

This incident has probably occurred many times without prompt reporting to the agencies that could have uncovered the airflow condition. In other words, one way to prevent accidents is to uncover the incidents, and eliminate their causes.

In the year 1954, a fantastic year for safety in airline operations, there were only three fatal accidents. However, over 40 other accidents were reported which resulted in injury to people or damage to equipment. How many similar incidents occurred but were not reported because only chance intervened to prevent damage or injury? Airline operations have reached the happy state where accidents are few, their causes form no set pattern, and therefore we must resort to incident reports to improve the record.

If you agree, then we face the problem of how to recognize and report the incidents.

But this presents many problems. Incidents which result from complacency, such as taking off with frost on the wings or other deviations from established operating procedures, will go unreported because, by definition, complacency means satisfaction with one's actions. The other type of incidents, the ones that are brought to the attention of the pilot by physical means—the unusual turbulence, the near miss, cockpit troubles, errors in navigation, may or may not be reported, depending on how much they scare the pilot, *and how much trouble will be created for the pilot after he reports them.*

The Problem Explored

Let's explore the problem of complacency. There are pilots, fortunately in the minority, who make no special effort to avoid turbulence; they feel they know how to handle it. Yet we know that turbulence discourages many passengers from flying and that it is one of the biggest killers in scheduled air transport operations. But a pilot with a carefree attitude towards turbulence will not be likely to report it because to him it is not dangerous.

Then there is the pilot who feels that he knows the terrain so well, like "the palm of my hand," that he feels he can disregard accepted traffic procedures even in bad weather, and establish his own let-down or climb-out procedures. He and others like him may be successful in doing this many hundreds, even thousands of times. They get away with deliberately improper practices because they retire before the law of averages catches up with them.

I am sure any pilot can recall several fatal accidents resulting from lack of compliance with planned take off or approach paths on the part of experienced pilots who may have accomplished the same procedure many times in bad weather without knowing how close they came to disaster. These incidents go unreported. But if a false instrument reading or a wind shift happens to occur at a critical time, the danger is compounded.

A paper presented by Mr. Lederer at the ALPA Air Safety Forum.

Industrial Statistics

The problem of incidents versus accidents has been studied in other industries. A famous safety engineer, William Heinrich of the Travellers Insurance Company, concludes that in shop practices, an accident can occur on an average of about 300 times before it results in a lost eye, a crushed hand, a broken arm or some other injury. Some employees may undertake the unsafe operation a thousand times and not be injured. Others may get hurt in the beginning. The average is one in 300 times. These hazards often result from complacency. For example, eye injuries are often caused by failure to use protective eye shields on grindstones. The "It Won't Happen To Me" attitude just as in the case of the pilot who knows the terrain "Like the Palm of My Hand." The point of all this is that complacency is easily acquired when the operator gets away with his unsafe practices. In the case of the shop, the employee involves only himself. In the case of the airline, public safety is affected and therefore complacency is a luxury which no pilot can justify. But like fatigue, complacency is not easy to recognize, especially in oneself.

Pilots Important

We must acknowledge that pilot integrity has been a very important factor in achieving our present safety record, that even without regulations well intentioned pilots will correct deviations from safe practice if the dangers are brought to their attention. Suppose a pilot has been making approaches in dangerous terrain in bad weather without following established practice. He continues to feel very satisfied with his ability. But suppose there was some device that later showed that in, say, one

The Al
CAME

Polio Shots

Capt. S. D. Baird of United Airlines changes his seat in the cabin of a plane for one at the wheel of an airport tractor as he personally delivers a shipment of Salk anti-polio vaccine to authorities in San Diego. A crowd of school children hail him.

Overseas Visi

Indonesians on tour of U.S. under au
ment of Labor and under federal Ove
Home Office to acquaint themselves
tion and operation.

Inaugural Flight

Left: Capt. Jack Schnaubelt at the contr of Chicago's Inaugural Flight of Super G Co l-lation. The Flight publicized TWA's new e, now in active service, to the Chicago and d-west area.

Jet Trai

Right: Tw e top ALP/
pleted the or Officers
Course at dy Air Fo
1st Vice P ent Chuck
Regional V esident W.
from left).

e: ALPA
AMERA

ver as Visitors

of U. . under auspices of U. S. Depart- nder ederal Overseas Aid program, visit uaint themselves with ALPA's organiza-

e contr of
r G C l-
s new e,
go and d-

Jet Training

ht: Tw e top ALPA Officers have com- ted the or Officers' Jet Familiarization urse at dy Air Force Base. They are: Vice ent Chuck Beatley (left) and gional V esident W. M. Masland (second m left).

Plane Christening

First UAL Mainliner to bear name of company pilot, the DC-7 "R. T. Freng," is christened at San Francisco by Freng's daughter, Miss Alice Freng, shown with W. A. Patterson, UAL president. Captain Freng, who died in 1952, pioneered in helping to develop instrument landing techniques.

in every five approaches he was brushing dangerously close to an unseen mountain. The incident is reported before the accident occurred. He would stop the dangerous procedure. This brings us to the value of a flight recorder for the pilot's own good. It is like telling the grindstone operators that eleven factories specialize in making artificial eyes.

Flight Recorders

Flight recorders, if not used as mechanical spies or as a basis for punitive measures, can act as a means to avoid accidents by reporting incidents. They could be developed to tell the pilot how closely he had been following correct practices in the event of a near miss or even an actual mid-air collision. They would uncover operating complacencies which the pilot or management have been accepting without realizing the dangers. In addition, flight recorders could act as a check on weather forecasts, especially turbulence, and thus add to the improvement of that science vital to safety, they could relieve paper work in the cockpit, they would act as a valuable aid to accident investigators and undoubtedly in many instances serve to protect the reputation of the pilot.

Flight recorders are also of economic advantage and in the case of jet operations are especially desirable for economic and statistical purposes. A discussion of this can be found in the AERONAUTICAL ENGINEERING REVIEW, January, 1955, "Instrumentation for Jet Transports" by Christopher Dykes.

Some railroads and buses already are fitted with recording devices. The Flight Safety Foundation's Accident Prevention Bulletin of May 9, 1951 says:

"The *Herald Tribune* of February 19, 1951, describes safety procedures and precautions adopted by the New York Central Railroal. Like airlines, some railroads are much more progressive than others in adopting safety devices and procedures. This railroad's crew physical examinations even include a check on the engineer's sense of smell (suggested for aircrews in FST APB 50-52); fire detectors are carried in the journals of wheels; what is more important: each trip is automatically monitored (with the approval of the crew)! This monitoring enables the engineer and management to *intercept an accident before it occurs.* This is done by a recording tape which indicates speed at any point in the trip. It is matched against the standard trip to show if operating procedures were up to standard or where the engineer could improve his technique.

Monitoring-Aftercasting

"A similar monitoring system showing altitude and bearings for aviation may have avoided many of the eleven collisions into mountains which have killed 221 passengers on scheduled airlines in the past six years.

"When a pilot flies into a mountain, when two air transports collide in flight, how many times has the pilot had a near miss without knowing it? How does a crew know how closely it is adhering to a flight plan, how does management know?

Radar Will Help

"When radar techniques and other monitoring devices are further developed the answers to these important questions will be readily available. The result should be increased efficiency in operation, in flight control, in fixing the cause of an accident (for example, as to who was at the correct altitude when a collision occurred). Most important of all, monitoring devices will enable air crews and management to intercept accidents before they occur. If a pilot unknowingly shaves a mountain, he will know about it the first time he does it instead of repeating it until he strikes! A recording system that will show altitude, track and speed at every moment of flight, in addition to other operating data can be analyzed after each flight (by the pilot) to show where he needs to correct his oversights in navigation and operating procedure. This would permit him to gauge his efficiency and show up his near misses. Capable pilots have expressed themselves as welcoming such an impartial system of flight checking.

"According to one airline expert, a monitoring device should:

1. Record what the pilot actually sees or hears.

2. Record photographically at least for one to three seconds on takeoff and landing or when gear and/or flaps are down.

3. Record three to five minutes in climb and cruise.

4. Be compared, when possible, with actual fact. For example, the device might record a radio range procedure, but pilot may be following a multiple course—into a mountain!

5. Be used with the consent of pilot and management except for engineering analysis—pilot identification may be omitted."

Recorders Have Limitations

Flight recorders would provide an important means to report incidents or deviations which may lead to accidents.

An incident reporting system already is in effect, as you know, in connection with maintenance. The airlines send to the CAA daily reports of certain mechanical difficulties and these are disseminated through the CAA, ATA, and other organizations industry-wide to prevent recurrence. This is an intelligent way to operate. It is ridiculous to have information at hand that might prevent an accident or incident and not use it to do so. This system is accomplished by written reports. *Limitations of Flight Recorders and Incident Reporting.*

An automatic reporting system such as a flight recorder will never be able to observe and report all the incidents that are required for a thorough accident prevention program. For example, no recorder on the market will report a near collision or detect the presence on board of a drunken and obstreperous passenger. The pilot will remain as a most important factor in incident reporting.

A Serious Situation

Dangerous incidents, not otherwise recorded, should be reported by the pilot in his self-interest and for public safety. This is unfortunately not always done. One reason is that pilots may accept a certain amount of unusual danger as a part of routine operations. This attitude can be combatted by an appeal to reason. But a much more powerful and understandable obstruction to the reporting of dangers is one to which I alluded before: The pilot does not want to involve himself in further trouble or in any way to jeopardize his reputation or his pilot's certificate. This is a very serious situation. It is the result of actions taken by government lawyers who feel impelled by their interpretations of the Civil Aeronautics Act to investigate incident reports for the purpose of determining whether a regulation had been violated so that punitive action can be taken. No responsible person condones culpable negligence or wilful misconduct but modern ideas of punishment depart considerably from the old concept that punitive measures are effective in improving safety. The pamphlet "Crime & Punishment" published by the Flight Safety Foundation contains an interesting study of this problem by Professor Kenneth Andrews of the Harvard School of Business Administration.

(Continued on Page 17)

NACA and the Air Line Pilots

Pilots and the pilot's operational viewpoint are represented on many high-level agencies. Here is a report on one of them, the NACA.

By Ed Modes

Beyond its daily activities, the Air Line Pilots Association is representing its members in connection with the work of many organizations that, often unheralded and unheadlined, are providing the real basis of aviation progress.

One of the most outstanding of these is the National Advisory Committee for Aeronautics, the government's aeronautical research agency.

Although in this day of Alphabetese the NACA, as it is often called, is sometimes lost in the shuffle of alphabetical agencies, it is not a new nor inactive agency.

Formed in 1915

Actually, it came into being in compliance with an act of Congress approved March 3, 1915. President Wilson appointed the original 12-man Committee in April of that year. This year, the NACA celebrated its 40th Anniversary, able to look back on four decades of illustrious achievements. In 1929, membership of the Committee was increased to 15 and then, in 1948, to 17.

In the conduct of its business, which is scientific research in aeronautics, the NACA has functioned to serve the needs of all departments of the Government. Serving without pay, the Committee operates like a Board of Directors, establishing policy and planning the research programs to be followed by the 7,000 Civil Service personnel who make up the technical and administrative staff of the NACA.

5 Pilot-Important Committees

Of the 27 technical committees of the NACA, five are most directly concerned with presenting the operational viewpoint in connection with planning of the NACA's research programs. The technical committees study such problems, and in turn recommend to the Main Committee research programs. The Main Committee establishes policy and research programs which the 7,000 research scientists and supporting personnel—the paid staff of NACA—follow. These committees are: Committee on Operating Problems, Subcommittee on Flight Safety, Subcommittee on Meteorological Problems, Subcommittee on Icing Problems, and Subcommittee on Aircraft Noise.

Committee Members

Membership on these Committees is not by organization, but as individuals with particular and qualified talents that make their experience of value to the NACA. ALPA is represented through President Sayen's personal appointment to the Committee on Operating Problems.

In addition to Sayen and numerous flying officers from the military services, membership on these committees include the following with long experience as pilots: M. G. Beard, vice president of American Airlines; Henry T. Merrill, Eastern Airlines; Melvin N. Gough, chief of the Flight Research Division of NACA's Langley Aeronautical Laboratory; Lawrence A. Clousing, assistant chief of the Full Scale and Flight Research Division of NACA's Ames Aeronautical Laboratory (all members of the Committee on Operating Problems); Scott Flower, Pan American World Airways; Carl M. Christenson, United Air Lines (members of the Subcommittee on Flight Safety); Robert N. Buck, Trans World Airlines; and Martin B. Cahill, Northwest Airlines (members of the Subcommittee on Meteorological Problems).

Early History

Since 1915 the research conducted by the NACA has been concerned with improving the ability to design aircraft that can be controlled and flown within the capabilities of the human. Through the years most of this research has been roughly classified into four categories, namely: aerodynamics, propulsion, structures and operating problems.

The early years of the NACA were a period of slow growth. It was not until 1920 that the NACA's first wind tunnel, at the Langley Aeronautical Laboratory, was placed in operation.

But by 1929, the aeronautical research of the NACA had overcome the long lead which had been enjoyed in earlier years by the European nations. In that year, the Collier Trophy was awarded to the NACA for development of what has become internationally known as the NACA cowl. Application of this streamlining around aircraft engines resulted in speed increases up to 15% with addition of power.

Soon after, work was completed which established the best position, aerodynamically, for engines. This resulted in nacelles being centered along the leading edge of the wings, instead of hung below as in the case of the Ford trimotor and other earlier airplanes. The Martin B-10, one of the first military aircraft to incorporate such advanced practice, showed itself to be a bomber that was faster than the current fighter airplanes.

During the thirties, the NACA developed more than a hundred different sections or airfoils. The "two-thirty" series of wings were among the most successful, and became the most widely used wing sections in the world.

In the late thirties, the NACA developed several new "families" of low-drag wing sections. First application of the principle of the so-called laminar flow wing was on the famous North American P-51 Mustang.

NACA and World War II

During World War II, for the most part, the NACA had to change its work from emphasis on fundamental research projects to specialized research designed to bring about immediate improvement in military aircraft already designed. Fortunately, work already accomplished had resulted in accumulation of a large backlog of data awaiting use. High speed propellers, new devices for maintenance of stability and control, improved systems for cowling and cooling engines at high speeds, and advances in knowledge of structural elements . . . the results of basic research on fundamental aeronautical problems carried on for 20 years . . . all were available for use.

Between December 1941 and Decem-

ber 1944, the NACA made design studies and tests of 115 types of airplanes.

Research Centers

Today, the NACA operates three principal research centers, and two smaller stations. They are:

Langley Aeronautical Laboratory, the largest and oldest of the research establishments of the NACA, located at Langley Field, near Hampton, Virginia. It is named in honor of Samuel Pierpont Langley, for many years secretary of the Smithsonian, who was internationally known for his pioneering in aeronautics. Construction of the Laboratory was begun during World War I, and by 1920 the first wind tunnel and engine test setups had been put into operation. More than 3,000 scientists and supporting personnel are now stationed at the Langley Laboratory. The problems studied include, in addition to aerodynamic investigations ranging from low speed to more than ten times the velocity of sound (7600 mph at sea level), hydrodynamics and structures.

The Ames Aeronautical Laboratory, at Moffett Field, California, about 50 miles south of San Francisco. Authorized by Congress in 1939, the Laboratory was named in honor of the late Joseph S. Ames, for many years at Johns Hopkins University; he was a member of the NACA from 1915 to 1939, and its chairman from 1927 to 1939. Staffed by nearly 1,500 men and women, the Laboratory concentrates on aerodynamic problems. Here is located the world's largest wind tunnel, with a test section measuring 40- by 80- feet.

Lewis Flight Propulsion Laboratory, located at the Cleveland, Ohio, airport. Authorized by Congress in 1940, the Laboratory was named in honor of the late George W. Lewis, director of aeronautical research of the NACA from 1919 to 1947. A staff nearing 3,000 is intensively studying ways and means of obtaining more powerful, more efficient engines for tomorrow's airplanes and guided missiles.

The High-Speed Flight Station, located at Edwards Air Force Base, on the Mojave Desert, California, established in 1944. Here transonic and supersonic research airplanes, including the Bell X-1 series and the Douglas X-3, are used to obtain, in actual flight, answers to pressing aeronautical problems.

The Pilotless Aircraft Research Station, located at Wallops Island, off the Virginia Coast. Established in 1945, the station is the site for launching of rocket-powered models. The models carry complex instrumentation which sends back, through telemetering, information vitally needed in the design of aircraft and guided missiles.

Aerodynamics

In the field of aerodynamics the results have gone directly into improving the performance of the aircraft in all respects, take-off, climb, maneuver, cruise, descent and landing. The results of this improvement in performance are evident not only in our latest military aircraft but also in our commercial aircraft and cockpits. If a more efficient control system was devised by the scientists in the many specialized wind tunnel facilities, thought was always given as to how effective these controls are in the hands of the pilot. Stick force per G is one of the control criteria which came out of the NACA flying and handling quality studies which is most important to the pilot. These flying and handling quality studies originally conducted at the NACA Langley Aeronautical Laboratory have afforded basic means of interpreting aerodynamic stability and control airplane characteristics in terms of acceptability by the pilot.

Power Plant Research

The aircraft power plant must also be designed and operated such that the pilot can smoothly integrate the propulsion unit with the airframe characteristics to successfully form necessary flight maneuvers.

The basic research that is ever going forward in reciprocating, turbo-jet, turbo-fan, ram-jet and rocket engines is always directed towards ease and flexibility of control. Equipment devices and instrumentation are developed to furnish the pilot with a crutch to help control some of these complicated powerplants but in the final analysis the hand on the throttle is the ultimate control.

Aircraft Structure

Research in aircraft structures to make the aircraft flexible and operational under all types of weather and maneuvering conditions are again directly related to the capabilities of the human pilot. To determine what aero-

Hunsaker Awarded Langley Medal

Dr. J. C. Hunsaker

On April 14, Jerome C. Hunsaker, chairman of the National Advisory Committee for Aeronautics was awarded the Langley Gold Medal of the Smithsonian Institution. The presentation was made at a private reception and dinner in the Great Hall of the Smithsonian on the occasion of the 40th anniversary of NACA, by the Honorable Earl Warren, Chief Justice of the United States, acting in his capacity as Chancellor of the Board of Regents of the Smithsonian.

Award of the Langley Medal as stated in the citation, was "in recognition of your unique and superlatively important contributions to aeronautics as a distinguished designer of aircraft, as the creator of a great center for instruction in aeronautical engineering, and as the scientific genius under whose leadership the present-day National Advisory Committee for Aeronautics has become the world's greatest scientific aeronautic research organization."

The Smithsonian's award to Dr. Hunsaker was the eighth presentation of the Langley Medal, and the first since 1935 when it was given to the late Dr. Joseph S. Ames, an original appointee to the NACA and at the time its chairman, and president of Johns Hopkins University. First recipients were Orville and Wilbur Wright, in 1909. In 1913 Glenn H. Curtiss and Gustave Eiffel, the French scientist, received the medal. In 1927, it went to Charles A. Lindbergh, and in 1929 to Richard E. Byrd and Charles M. Manly, builder of the engine which powered the original Langley airplane.

aynamic loads do to the aircraft and the resultant forces felt by the pilot are of primary importance in the attainment of successful flight. Aircraft fatigue, landing loads, maneuver loads and vibration and flutter are some of the basic studies that are used in the design of the aircraft structure.

Other Scientific Research

Problems of determining the atmospheric characteristics and associated hazards such as turbulence, ice, hail, heavy precipitation are most important in designing for or in helping the pilot cope with these adverse operating conditions.

Providing the pilot with accurate means of determining air-speed, altitude and attitude have received considerable attention as the speed, range and altitude of aircraft have continued to increase.

Problems of engine reliability, runway tire friction coefficients, thrust reversal, aircraft noise, ditching procedures, spin recovery studies, crash survival, aircraft and crash-fire inerting systems are among some of the day-to-day operating problems that directly concern the pilot and which are receiving NACA attention.

The NACA-Pilot Relationship

All of these things ultimately have direct effect on you, the individual pilot. It all affects your safety and in many ways your entire professional career. Many of the things NACA is working on today may not, it is true, have immediate application. But come the results will— if not today, perhaps tomorrow or the next day. And without many even realizing it, the professional air line pilot will be having a hand in through his representative's activities on NACA.

Of its relation with the pilots, the NACA says:

"The results of NACA research in all of the various research fields that go into today's military air-arm are reflected in tomorrow's commercial transportation system. True basic research in these fields may not always be directed, initially, toward the pilot but the system of applied research, development and operational usefulness in America's aircraft industry results in the goal of providing the pilot with the best equipment to accomplish safe flight. The NACA encourages discussion of the problems of the pilot in the operation of aircraft and through this medium is able to advise the industry on the application of available data for aircraft design to alleviate the pilot of these problems."

How Busy Are Our Air Lanes?

The Chicago Midway Tower—The Nation's Busiest

This busy air of ours is getting busier all the time. To traffic-harried air line pilots that bit of news is probably merely confirmation of suspicion.

But even few pilots probably know exactly how busy our air lanes are. The answer to that question and how one area stacks up in relation to another is revealed in CAA statistics embodied in a report on "Federal Airways Air Traffic Activity," published by the CAA, U. S. Dept. of Commerce.

The busiest? Right in ALPA's own back yard with Chicago (Midway) being tops among the nation's airports in the number of arrivals and departures in 1954 for the third straight year according to the CAA's figures.

Midway Airport, with 349,363 aircraft movements recorded in the CAA operated control tower, was far in front of second place, Los Angeles, which registered 279,630 movements in calendar year 1954. Other cities among the top ten in total civil and military movements were:

Miami	268,889
Honolulu, T. H.	266,583
New York (LaGuardia)	236,012
Denver	235,362
Cleveland	223,741
Dallas	215,685
Atlanta	211,674
Louisville (Bowman)	210,507

When purely local operations were excluded from the count, Chicago (Midway) also led, with 330,872 operations, by air carriers and itinerant civil and military planes. New York's La Guardia was second in this category with 228,088, followed by:

Washington National	199,489
Los Angeles	196,558
Dallas	195,343
San Francisco	165,810
Cleveland	160,052
Miami	159,595
St. Louis	154,509
Atlanta	154,276

Control towers operated by CAA handled a grand total of 17,944,523 aircraft movements during the year, or 49,200 in every 24-hour period and 2,050 every hour during the year. The total for the year was 1.1 million above the 1953 level, a gain of seven per cent.

Also on the increase during 1954 were the fix postings handled by CAA air route traffic control centers and RAPCONS (radar approach control) centers, both of which reflect the volume of air traffic along the airways between major terminal points. (A fix posting is a report by the pilot of an aircraft on an instrument flight rules flight over a specific reporting point or fix.)

During the year, 16,865,819 fix postings were recorded, against 15,026,893 in 1953 and 13,136,703 in 1952. Five CAA air route centers each handled more than 800,000 fix postings in 1954. They were:

New York	1,740,404
Chicago	937,042
Oakland	914,457
Washington	894,341
Atlanta	857,060

Together, these five centers handled approximately one-third of all the fix postings recorded during the year.

Air Route Traffic Control

ARTC's Problem is This: It must take care of the present, look to future at the same time.

By Wayne Hendershot
Chief, Traffic Control Procedures Div., CAA

There are many facets of this particular problem which are already known to the majority of pilots who have been exposed to handling by ARTC centers. Therefore, I won't cover each and every one. I will, however, point out some of the basic elements and elaborate on one or two with which some of you may not be too familiar.

Directly Related Factors

The following factors relate directly to problems with which the center controller is faced:

- Inadequate methods and equipment for transfer of data between controllers;
- Inadequate presentation of flight and control data to controllers;
- Delay in communication between controller and pilot;
- Failure or inability of pilots to adhere to provisions of their flight plans; and
- Incompatibility of the L/MF and VHF airway systems.

Some pilots may have read the report prepared by the special operations working group known as "SWG-5", or may have even worked as part of that group which initiated, demonstrated, and evaluated the procedures and equipments required for efficient traffic control.

Many Problems Still Exist

This report is now three years old and many of the problems, particularly flight posting, are still with us and in some areas have multiplied and aggravated the traffic control problem.

I refer specifically to the two-airway systems with which we, both pilots and controllers, are attempting to live. Establishment of the long needed all weather visual navigation system, which in many cases overlaps or crisscrosses the L/MF system, has increased the complexity of fix posting on the flight progress boards thus requiring that more time be spent scanning the boards to detect possible conflictions.

Naturally, if the information which the controller uses to effect separation is difficult to correlate, and requires considerable study, the desired objective, efficient traffic control, is not always obtained.

The constant "putting together the picture" by means of flight progress strips, upon which much information is written (oftentimes hurriedly and not too clearly) is tiresome and, if such information is not initially put on these strips correctly, it is necessary that the controller check the source and obtain the necessary corrections.

All this is time consuming and takes the controller's mind from his primary function of issuing clearances to effect the safe and expeditious movement of the traffic under his jurisdiction.

Now, let me go back to the basic reason for the establishment of centers. There had to exist a semblance of order in the use of the airspace so that IFR traffic could move through that airspace with safety. A central location to exercise this control was established and others added as the traffic increased and additional airways were established and additional funds became available.

Constant Expansion

The history has been one of constant expansion, and the manner of flight posting has always been a problem as evidenced by the many changes made in the method of portraying the data and the type of flight progress strip used.

Thus far, we have only scratched the surface of the flight posting difficulty. The additional handling of this data, after it is placed on the strips, is also something which needs further study for, in the passing of data from sector to sector and center to center, we come up against that old bugaboo "data transfer." We have tried many different methods to get this data from one man to another, but usually revert to interphone as the most expedient means to date. Naturally, this requires two men on the interphone line at the same time; one to transmit and the other to receive and record the flight information. In respect to transfer and presentation of data, the manual effort involved in the collection, dissemination, and display of flight data between sectors, both within and between centers, requires much more of the controller's time than is given to analyzing control problems. Distraction of a controller's attention from his primary responsibility is reflected in the delays to aircraft under his jurisdiction and prevents efficient utilization of the airspace.

Working on New Plan

As I said previously, many different means have been tried to get the data from one controller to another and we have often gone back to the interphone. Now we are working on a plan which seems to have considerable immediate potential and it revolves around an expanded use of the CAA teletypewriter system. This plan, if it is to be implemented nationwide, will require some change in flight data and flight plan handling within the center. The operators, and I refer to all—civil, air carrier or military—will not be required to make any changes to their current methods of operation and no surface changes will be noticeable.

The internal changes, however, will result in a considerable saving in manpower in the center and it is visualized that such saving will result in more efficient handling of all IFR aircraft by the centers.

In order to fully implement this particular type of operation, the CAA must realign a number of its teletypewriter circuits and re-arrange center equipment. The Air Force has placed considerable stress on mass movements of long range IFR training flights and the relay of the lengthy related control data has been expedited by the use of the existing teletypewriter system.

A Final Word

I have one last thought I'd like to pass on; we are all trying to develop a system which will take care of our contemporary problems, and looking into the planning crystal so that when the civil jets and helicopters arrive en masse, we'll be able to give satisfactory service to all users of the airspace.

Condensed from a paper delivered at the 1954 ALPA Air Safety Forum.

Effective Accident Prevention . . .

(Continued from Page 12)

Be that as it may, flying is still an art and as a consequence there exists a vast area of operations which remains in the realm of good judgment, of special interpretation of regulations in the light of peculiar conditions, and even of authorized violations of the regulations. The reporting of dangerous situations, however, seems to be effectively blocked by procedures within the government or by the legal system which gives the pilot a feeling that he is putting his foot in his mouth when he reports an incident, and he must be prepared to defend himself from legal attacks.

Proof of this was furnished by the recent survey of near collisions conducted by the Air Transport Association. It was believed that near misses were occurring at a rate much greater than the rate reported by pilots. Pilots were reluctant to report because of fear of involving themselves in government investigations. The ATA then prepared a form, for reporting near misses, which required no identification. The results were astounding, not so much in the number of incidents reported which was more or less expected, but in the prompt response by pilots to report near misses when they were freed of the fear of possible repercussions.

By looking back, by aftercasting, a flight recorder can help us peer into the future to determine what can be done to avoid trouble. But to this must be added the cooperation of pilots and all other personnel who can pass on information beyond the ability of a flight recorder to develop.

If no solution to the punitive aspects of incident reporting is in sight, it is suggested that a small group be formed to delve into this problem immediately to determine a suitable course of action satisfactory to all concerned so that accidents can be prevented by reporting incidents.

Accident Investigation

In the absence of a good incident reporting system, and even if it existed, we must still learn as much as possible from accident investigations. Two types of information are brought out at accident investigations: information that bears directly on the probable cause and information that reaches far back beyond it. It seems ridiculous that pilots are compelled to resort to the Fifth Amendment of the Constitution to protect themselves after giving testimony at an accident investigation, or that they should seek legal assistance prior to giving their testimony. Or that management must be careful in distributing information on safety or that

Toward Tomorrow . . .

(Concluded from Page 4)

this in a sphere of fierce competition and in the era of the world's most numerous and darkest antagonisms.

Could it be perhaps that survival for all will emerge from a mutual concern for human safety? Might the eventual brotherhood of man be expressed in voluntary disciplines based upon common respect for human life?

In air transportation our safety procedures have grown immeasurably. In the beginning, they were warnings of danger. Now they are studies of preventive measures against development of hazards. And such is the degree of cooperation that we begin to wonder if our frescoes on the clouds of the skies may have larger implications than the building of international air travel. From our cockpits and desks and laboratories and control towers we believe human nature is ready for higher levels of cooperation.

If dedication to the enforceable safety of others could reach beyond the law of life for air travel, what might not accrue to the peace of the world as we struggle toward tomorrow?

FLIGHT BAGS

direct from manufacturer

FLIGHT BAG No. 150 -

A one piece bag and portfolio combination specially designed for the pilot. Made of fine durable top grain cowhide. Opens from top . . . easy to reach for anything while bag stands next to you in cabin. Traveling bag with top zipper and 3 equally divided pockets. Portfolio with top zipper, inside pockets for papers, manuals, reports, charts, etc. Rigid sides — prevents sagging. Steel frame plus heavy cowhide carrying straps for extra support and durability. Saddle-stitched for extra strength. Bottom metal studs prevent scuffng. Size: 18x8x14 (Portfolio 18x2x12). Colors: Black, Ginger, Brown or Suntan. **$37** (tax incl.)

FLIGHT BAG No. 150S *same as above with detachable portfolio* **$39** (tax incl.)

FLIGHT BAG No. 200 *(not illus.)*

A detachable portfolio and bag combination. Portfolio has heavy mesh all around zipper. Traveling bag features a double all-around zipper which allows it to open flat. A series of special snaps make it easy to separate units for individual carrying. 18x6½x13 (Portfolio 16x11). Colors: Suntan, Ginger. **$39** (tax incl.)

Send Check or Money Order to Dept. AL-56

Write for Free Flight Bag Catalog Folder

ALLIED BRIEF CASE CO., 186 Fifth Avenue, N. Y. C. 10, N. Y.

DIRECTORY
OF PRODUCTS AND SERVICES

VISUAL TRAINING
OF COMMERCIAL AIR LINE PILOTS

To Meet Eyesight Requirements of Periodic Company and C.A.A. Exams

DR. JOHN T. FLYNN
OPTOMETRIST - ORTHOPTIST
Visual Training Specialist

300 W. 23rd St., New York City
By Appointment Only **WA. 9-5919**

discussions on safety go unrecorded because of the fear that they may later be used against the company or the pilot in an accident investigation and subsequent legal action. The need to protect the interests of passengers who suffer from an accident must be conceded but some way should also be found to counteract the threat of a legal system which permits a lawyer to use safety information to advance the interests of a particular client and thus paradoxically affect adversely the safety of the public by thwarting freedom in developing safety information.

Accidents offer opportunities to elicit information beyond that required to determine the probable cause of an accident.

To accomplish this, changes in accident procedures appear desirable because here again the specter of the law interferes. One cannot fight nature very long. It is in man's nature to try to protect and defend himself. It is natural to expect that at public hearings the vast amount of knowledge and experience available from pilots, maintenance people, management and others will not be voluntarily exposed to public scrutiny; people will avoid hanging up dirty linen if such information can be used to the discredit and economic loss of the person who gives the information. Accident investigation might, therefore, from the point of view of public hearings, be limited strictly to the evidence at hand which might lead to determine the probable cause of the accident or list the factors that contributed to the accident. Even in such limited investigations the threat of legal and punitive action will inhibit full freedom of expression. But information would not be as encompassing as investigations which go into ramifications not directly concerned with the accident. Then further interrogations could be conducted privately from clues presented as a result of the accident to determine what other safety information can be learned from it.

This discussion emphasizes the need for flight recorders and incident reporting so that preventive measures can be taken to forestall accidents. It also focuses attention on legal obstacles and associated problems of procedure which are hard to solve. Much of the trouble is based on antiquated concepts of the reasons for punishment. The industry has solved other difficult problems. Why not slay the legal spector in accident investigation and incident reporting so that accidents can be prevented by the free sharing of experience and knowledge?

Frye's Famous 'Airline' Oxfords

A Real Treat For Your Feet

Handsome foot-flattering style. Wonderfully light weight and comfortable.

NOW BY MAIL postpaid.

Brightly polished calf leather, fully leather lined, leather soles, rubber heels.

Satisfaction guaranteed. ORDER NOW. Enclose check or money order.

BLACK OR BROWN. Men's sizes 6-12, ABCDE, from stock. $9.95

Sizes 12½-14, ABCDE, made to order..... $11.95

WRITE FOR FREE CATALOG

TODD'S

Dept. AP6, 209 S. State St., Chicago 4, Ill.

ANDERS' "88" SERVICE

SAVE UP TO $1,000 OR MORE ON NEW 1955 OLDSMOBILE

New cars—You pick up at factory in Lansing, Mich.

Arrangements have been made with a dependable, authorized Oldsmobile dealer for processing of your order. This service is available to members of ALPA, their families, and friends. Don't fail to take advantage of this service offered by an active pilot member of ALPA. Service includes:

ALL MODELS, "88," "S88," "98" — ANY EQUIPMENT — ANY BODY STYLE—COMPLETE FACTORY SERVICE—ANY COLOR COMBINATION—21-DAY DELIVERY—FACTORY GUARANTEE —SERVICE POLICY.

FILL IN --- AND MAIL FOR EXACT QUOTATION

ANDERS' "88" SERVICE
17029 21st Avenue, South West
Seattle 66, Washington

Without obligation, send me quotation on model checked, with special equipment also as checked.

SERIES "88"	SERIES "S88"	SERIES "98"
☐ 2-door sedan	☐ 2-door sedan	☐ 4-door sedan
☐ 4-door sedan	☐ 4-door sedan	☐ Deluxe 2-dr. Holiday
☐ 2-door Holiday	☐ 2-door Holiday	☐ Deluxe 4-dr. Holiday
☐ 4-door Holiday	☐ 4-door Holiday	☐ Starfire Convertible
	☐ Convertible	

NAME_____

ST. ADDRESS_____

CITY_____

ZONE_____ STATE_____

FACTORY-INSTALLED SPECIAL EQUIPMENT PLEASE CHECK

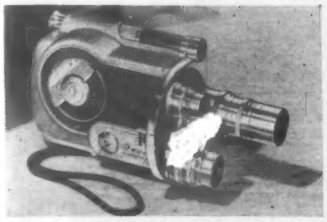
- ☐ Hydramatic
- ☐ Super dlx radio
- ☐ Deluxe radio
- ☐ Windshield washer
- ☐ Tinted glass
- ☐ Power steering
- ☐ Power brakes
- ☐ Auto. seat adj.
- ☐ Auto. window lifts
- ☐ White sidewall tires
- ☐ Autronic eye
- ☐ Wheel trim rings
- ☐ Wheel disks
- ☐ Auto. op. antenna
- ☐ Hand brake signal
- ☐ Electric clock
- ☐ Rear seat speaker
- ☐ Back-up lights
- ☐ Dlx. steering wheel
- ☐ Foam seat cushions
- ☐ Safety padded instrument panel
- ☐ Cloth carpet
- ☐ Glare-proof tilt mirror
- ☐ Custom lounge cushion
- ☐ Olds air condition
- ☐ Rear fender panels
- ☐ H.D. Air cleaner
- ☐ Full flow oil filter
- ☐ Front courtesy lites
- ☐ 202 h.p. engine for "88" only

ALPA MEMBERS ONLY!

Karl Ruppenthal makes available to ALPA members the finest in cameras, projectors, and tape recorders . . . all at important savings. These items are "demonstrators" or "display models." Some have had a roll or two of film run through them. Frankly you won't be able to tell them from brand new! All carry the manufacturers full guarantee. What's more, you can order any item and try it for a week. If you are not absolutely satisfied in every way, return it for a full refund.

Revere TR-200 Recorder - Radio Combination. Wonderful for the kids in school. Lots of fun on parties. Regularly $224.50. ALPA special **$149.** Same model without radio regularly $169.50. ALPA special **$119.**

Famous Remington Quiet-Riters—all brand new! Regularly $120. ALPA price **$94.** Buy one for no money down and $5 per month. Other makes and models available. Write for prices.



"26" 16 MM Magazine Turret Camera by Revere. Complete with f 2.7 lens. Regularly $187.50. ALPA special **$123.** With f 1.9 lens regularly $212.50. ALPA special **$140.**

DeLuxe "85" Projector for your 8mm movies. Complete with 500 watt lamp. Lifetime guarantee! Regularly $124.50. ALPA special **$93.**

8mm Movie Cameras

	Regular Price	ALPA Special
Revere 80 f 2.5 Wollensak	$ 97.50	$ 68.50
Revere 50 f 2.8	49.50	37.95
Revere 84 turret f 2.5	122.50	88.50
Revere 70 magazine f 2.8	109.50	83.50
Bolex B-8 f 2.8	119.00	96.50

Miniature Cameras

MINOX IIIs	139.50	107.00

(Only 3 demonstrators available.)

35mm Cameras

Voigtlander Vitessa f 3.5	99.50	79.50
Argus C-3	66.50	53.00

Stereo Cameras

Revere 33 f 3.5	174.50	125.00

35mm Projectors

Revere 444	69.50	52.00
Argus	66.50	53.00
Revere 888 Automatic	119.50	99.00

Movie Projectors

B&H 202 Filmsound	719.00	595.00
Revere 16mm Sound	325.00	245.00
Revere P-48 16mm	182.50	132.50

Tape Recorders

Revere T-700D Keyboard dual speed model	212.50	159.50
Revere TR-800D radio combination—dual speed	265.00	199.50

Quantities limited. Wherever possible give second and third choice.

KARL RUPPENTHAL
1711 Guinda Street, Palo Alto, California

☐ $10 is enclosed. Please send me_____ (item). I'll pay $10 a month until it is paid for.

☐ $_____ is enclosed. Please send me_____ (item). I understand that I may return it for a full refund after a week's trial if I am not satisfied in every respect.

Short on cash? Buy any item for just $10 down and $10 a month (small carrying charge). Same money back guarantee, of course.

Name_____ Airline_____

Address_____

City_____ State_____

Something new for Flying...

COSMETAN SUN GLASSES

Here's a startling new lens development for greater flying safety and comfort in the sun. Never before has there been a sun glass that gives such tremendous protection in the sun — yet actually sharpens, not just darkens your vision.

Cosmetan lets you see naturally in the most blinding sun glare aloft. Kills eye-torturing reflected glare from planes, runways, water, ice or snow on the ground.

And actually *improves* your vision on hazy days. Makes distant objects, clouds, landscapes stand out — *emphasizes* their three-dimensional appearance.

Brown in color, Cosmetan really combines four different color "filters" — green, amber, blue, pink (to screen out more sunburn and heat rays). The result — a whole new experience in "seeing" in the sun. The ultimate in sunlight control.

Precision-ground and polished to the very highest standards of quality, Cosmetan Sun Glasses are by all odds the finest you can buy for your eyes.

See for yourself, wherever professional eye care services are rendered. And take your pick of many smart new frame styles.

Gives more protection in the sun.

•

Makes distant objects stand out.

•

Improves your vision on hazy days.

American Optical

CHELSEA, MASSACHUSETTS

† T.M. Reg. by American Optical Company